Official

AUG 14 1985

Tennessee Valley Authority
ATTN: Mr. H. G. Parris
Manager of Power and
Engineering (Nuclear)
6N11 B Missionary Ridge Place
1101 Market Street
Chattanooga, TN 37402-2801

Gentlemen:

SUBJECT: FEMA FINAL REPORT - SEQUOYAH NUCLEAR POWER PLANT
EXERCISE OF FEBRUARY 6, 1985

Enclosed is the Federal Emergency Management Agency's (FEMA) Final Report of the Sequoyah Nuclear Power Plant Emergency Exercise conducted on February 6, 1985, regarding exercise participation by the State of Tennessee and Bradley and Hamilton Counties. Your attention is directed to the suggested areas for improvement identified by FEMA.

We encourage you to assist the State of Tennessee and Bradley and Hamilton Counties to resolve the improvement items identified by FEMA. Resolution of these items should be completed prior to the next full scale emergency preparedness exercise.

We also encourage you to work closely with the State and counties in development of the scenario for the next full scale exercise that will effectively test those areas in which the previous deficiencies were disclosed.

Your cooperation in this matter is appreciated.

Sincerely,

David M. Verrelli, Chief
Reactor Projects Branch 1
Division of Reactor Projects

Enclosure:
FEMA Exercise Report

cc w/encl: (See page 2)

1/1 IE35

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RII	RII	RII	RII
WWS	WWS		
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for 8/12/85	for 8/12/85	8/12/85	8/13/85

Federal Emergency Management Agency

Washington, D.C. 20472

JUN 21 1985

MEMORANDUM FOR: Edward L. Jordan
Director
Division of Emergency Preparedness
and Engineering Response
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission

FROM: Richard W. Krimm
Assistant Associate Director
Office of Natural and Technological
Hazards Programs

SUBJECT: Exercise Report for the February 6, 1985, Exercise of the Offsite Radiological Emergency Preparedness (REP) Plans for the Sequoyah Nuclear Power Plant (NPP)

Attached are two copies of the Exercise Report for the February 6, 1985, partial participation joint exercise of the offsite REP plans for the Sequoyah NPP. The Sequoyah NPP is located approximately 18 miles northeast of Chattanooga, Tennessee in Hamilton County along the Tennessee River. Hamilton and Bradley Counties, both located in the 10-mile plume emergency planning zone, fully participated in the exercise along with partial participation by the State of Tennessee.

The exercise report was prepared by Region IV of the Federal Emergency Management Agency (FEMA). There were five NUREG-0654/FEMA-REP-1, Rev. 1 deficiencies observed during the exercise that require a schedule of corrective actions. These deficiencies, which are typically classified as Category B deficiencies, can be corrected through training and additional resources. These deficiencies did not detract from the overall capability demonstrated by the State of Tennessee and Hamilton and Bradley Counties to protect the health and safety of the public in the event of a radiological emergency. Therefore, the 44 CFR 350 approval granted on August 7, 1980, will remain in effect.

FEMA Region IV staff will furnish a copy of this exercise report to the State of Tennessee and will obtain a schedule of corrective actions. The Region will assure completion by the State of the necessary corrective actions.

If you have any questions, please contact Mr. Robert S. Wilkerson, Chief, Technological Hazards Division, at 646-2860.

Attachment
As Stated

SEQUOYAH NUCLEAR POWER PLANT

EXERCISE

Conducted on February 6, 1985

FEDERAL EMERGENCY MANAGEMENT AGENCY

REGION IV

Federal Emergency Management Agency
Region IV 1375 Peachtree Street, NE Atlanta, Georgia 30309

SEQUOYAH NUCLEAR POWER PLANT

EXERCISE

Conducted on February 6, 1985

Exercise Report March 5, 1985

Utility: Tennessee Valley Authority
Plant Location: Hamilton County, near Chattanooga, Tennessee

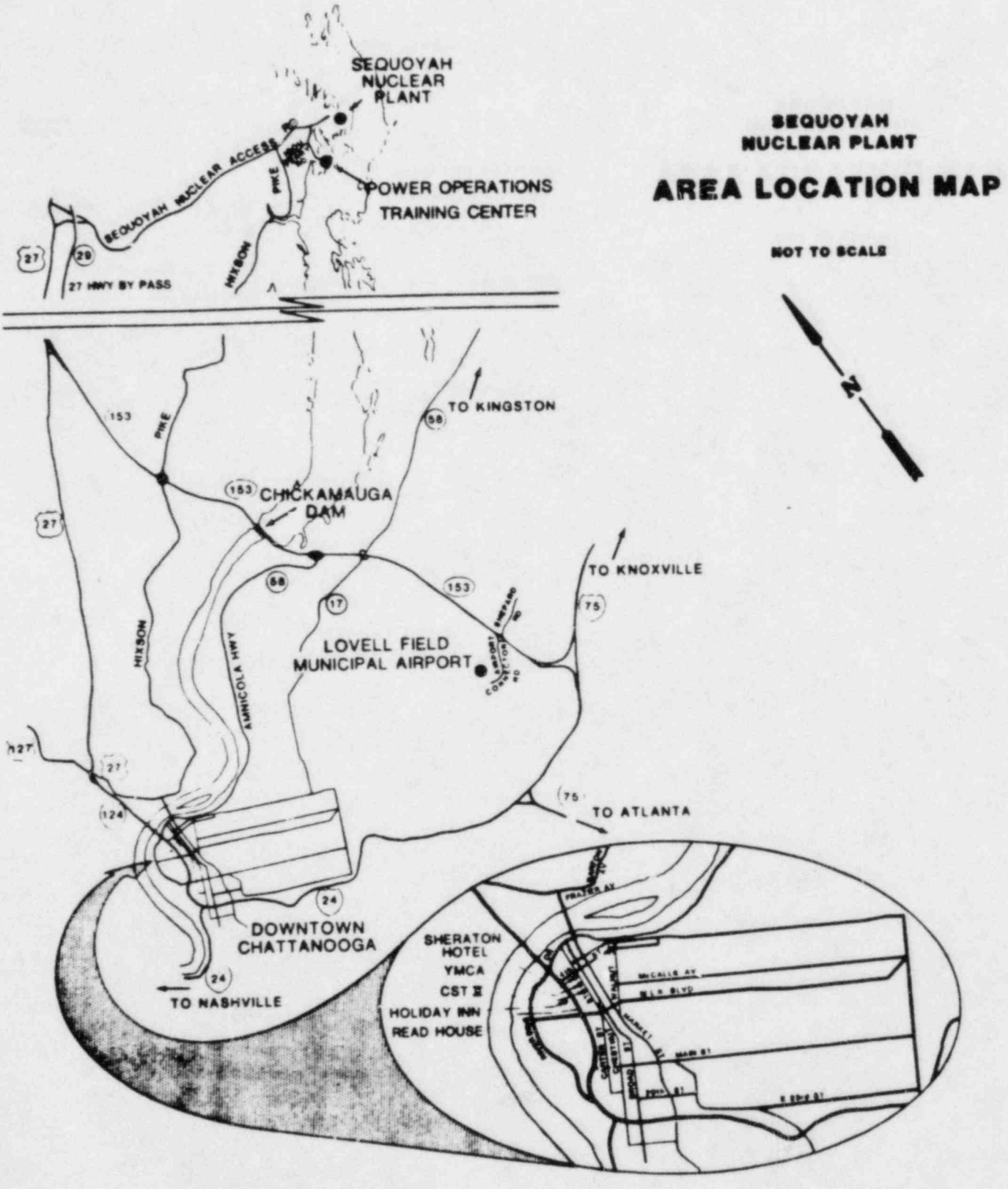
Participating State and local governments:

State of Tennessee
Hamilton County
Bradley County

SEQUOYAH NUCLEAR PLANT

AREA LOCATION MAP

NOT TO SCALE



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I. EXERCISE SUMMARY

The Sequoyah Nuclear Power Plant conducted an emergency response exercise on February 6, 1985. An off-site emergency response capability was fully demonstrated by Hamilton and Bradley Counties. The State of Tennessee participated in the exercise providing partial support. This exercise is referred to as a partial participation exercise.

The off-site exercise activities were observed by 18 Federal evaluators representing seven Federal agencies (FEMA, NRC, DOE, DOT, FDA, EPA and USDA). This was the fifth test for local and State governments to demonstrate off-site preparedness for the Sequoyah Nuclear Power Plant based on NUREG-0654-FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans for Preparedness in Support of Nuclear Power Plants".

The Sequoyah Nuclear Power Plant is located in Hamilton County along the Tennessee River. The plant site is approximately 18 miles northeast of Chattanooga, Tennessee. Parts of Hamilton and Bradley Counties lie within the 10-mile Emergency Planning Zone (EPZ) and are risk counties. These counties will also serve to host any evacuees from the 10-mile EPZ should evacuation be necessary.

All objectives for the exercise were met. There were five deficiencies observed during the exercise. These deficiencies can be corrected through training and additional resources. Only one deficiency was a recurring deficiency from the previous exercise. The following is a brief summary of the off-site exercise activities.

State of Tennessee

The State Emergency Operations Center (SEOC) in Nashville is an outstanding facility with excellent communication systems and personnel who effectively directed the emergency response to the incident at the Sequoyah Nuclear Power Plant.

One State Liaison Officer was sent to the Central Emergency Control Center (CECC). There continues to be a concern in the breakdown of communications between the TVA dose assessment group in the CECC and the State's dose assessment group in the SEOC.

The Joint Information Center (JIC) was activated during the Sequoyah Exercise and adequately demonstrated a public information operation. The limited availability of State Public Information Officers, due to other State activities, created the opportunity to use this exercise as a training activity, which was effective for response staff.

The State Division of Radiological Health personnel in the Radiological Monitoring Control Center (RMCC) worked very effectively with TVA personnel to coordinate the radiological monitoring field

teams. The RMCC could perform more effectively if they received more information such as plume and dose projections and meteorological conditions from the State EOC in a timely manner.

Radiological field monitoring teams are generally adequately trained and equipped to carry out their assigned tasks. Some minor training and equipment weaknesses were noted.

Risk Counties

The hospital staff and Emergency Medical Services (EMS) personnel performed all functions adequately. Recommend direct communications be exercised between transport personnel and the receiving facility to ensure the receiving facility is aware of the incoming problem.

Bradley and Hamilton Counties demonstrated an adequate capability to evacuate the populace of an endangered area.

The Hamilton County EOC is an excellent facility with exceptional staff. Leadership was good. Staff knew their responsibilities and effectively demonstrated their ability to manage the emergency response.

Although there are some internal communication refinements needed, the Bradley County EOC demonstrated it could adequately handle an emergency situation. Leadership, elected officials' support and a dedicated and cooperative staff were the strong points of this operation.

Bradley County demonstrated the ability to protect the population by activating a Shelter Information Point and a shelter. Participating personnel exhibited a high level of interest and were able to identify several areas that need further improvement to ensure the smooth handling of evacuees.

II. DETAILED DISCUSSION

Introduction

The Sequoyah Nuclear Power Plant is located in Hamilton County approximately 18 miles northwest of Chattanooga, Tennessee. Hamilton and Bradley Counties are located in the 10-mile EPZ. Both risk counties participated in the Sequoyah Nuclear Power Plant Exercise. No activities were conducted in the 50-mile Ingestion Pathway. The State provided partial support and participated at the State EOC, CECC, RMCC, JIC and field monitoring activities. This exercise is referred to as a partial participation exercise and was conducted on February 6, 1985.

This was the fifth exercise for State and local governments in the Sequoyah area. The off-site response was conducted in accordance with the "Multi-Jurisdictional Radiological Response Plan for the Sequoyah Nuclear Power Plant."

Criteria used to evaluate the exercise are contained in the "Modular Format for Uniformity of Radiological Emergency Preparedness Exercise Observations," issued by FEMA on August 5, 1983. (For a detailed listing of evaluators and assignments, see Appendix A.)

The exercise objectives were successfully integrated into the scenario. All objectives were accomplished during the exercise (see Appendix B - Exercise Objectives). The scenario established exercise activities for one day (see Appendix C - Exercise Scenario). In summary, the scenario established activities for full emergency response from Hamilton and Bradley Counties.

The Sequoyah Nuclear Power Plant Exercise included the following participants:

Sequoyah Nuclear Power Plant
Tennessee Valley Authority
Tennessee Emergency Management Agency
Tennessee Department of Health and Environment
Hamilton County Government
Bradley County Government
Tennessee Department of Agriculture
Tennessee Wildlife Resources Agency
Tennessee Governor's Office
Tennessee Public Service Commission
Tennessee Department of Transportation
American Red Cross
U. S. Coast Guard
Emergency Broadcast System
Federal Emergency Management Agency
Nuclear Regulatory Commission
Department of Energy
Other Federal agencies (DOT, EPA, USDA and FDA)

During the exercise demonstration, several deficiencies were noted for the local governments. These deficiencies are identified in the following Detailed Discussion and a summary listing is included in Section III. Overall, five deficiencies were observed, three in Hamilton and two in Bradley County. One of the Bradley County deficiencies is a recurring deficiency involving facilities. However, plans are well underway for the new EOC and this should be corrected within the next several months.

The following detailed discussion highlights the specific activities demonstrated during the Sequoyah Exercise. Activities are discussed by the location of the demonstration beginning with the State of Tennessee and concluding with the local governments.

State of Tennessee

State Emergency Operations Center (SEOC)

The activities and staffing of the State Emergency Operations Center (SEOC) were prompt and effective once the notification of Alert status was received from the plant. Essential TEMA personnel were notified to report to the EOC at the Alert classification. Other State personnel representing various departments arrived following the Site Area Emergency declaration. The radio pager system functioned effectively in mobilizing the emergency personnel.

Mr. John White, Deputy Director for Operations, TEMA, was effectively in control of directing the State's emergency response. Frequent briefings were held to keep the staff notified of the changing emergency conditions. State agency emergency management personnel participated in the briefings and were an effective part of the decision-making process. Emergency responders effectively coordinated their actions with each other.

All players at the EOC exhibited a professional attitude.

Copies of the Sequoyah REP Plan were available for reference and were used throughout the exercise. Message logs were kept current and message handling procedures were efficient.

Although security at the entrance of the EOC was not established for the purposes of this exercise, access was controlled through distribution of passes which allow participants to enter through the secured doors.

The State EOC was promptly notified by the utility of all changes in emergency classification levels.

The State EOC in Nashville is an excellent, underground emergency facility. The facility is now complete after undergoing extensive renovation. Emergency operations are divided into two separate areas: communications and operations. The communications systems were effective and worked well throughout the day. There are adequate telephones, space and equipment to support the State's emergency response.

The operations room is large and well-equipped with adequate maps and status boards which were kept up-to-date and reflected the changing emergency conditions.

Internal communications were excellent. Frequent briefings were held to update the State staff. Microphones were used in the briefings which aided in the direction of the managers.

Communication equipment between the utility, State, local governments and the Joint Information Center (JIC) was reliable and worked effectively. The dedicated ring-down system was consistently monitored throughout the day. It provided current information from the utility on plant conditions and provided an effective means for the State and local governments to learn of the emergency conditions.

A telecopy machine was available to transmit hard copy messages to all locations. This machine experienced some backlog. An additional telecopy machine would be helpful in expediting message flow to the JIC and other locations. Messages dispatched and completion time ranged from 5 minutes to 15 minutes.

The radiological health portion of the exericse at the State EOC was performed in a well organized, efficient and professional manner. All personnel carried out their assignments according to previously established SOP's and situations as dictated by the scenario and TVA at the Sequoyah Plant. There were no significant communications problems within the EOC or with TVA at the Central Emergency Control Center (CECC).

There was radiation exposure of 53.5 REM to some of the population being evacuated one mile from the plant, 20.5 REM at two miles from the plant, and 6.2 REM at five miles from the plant. All of those doses were to the thyroid against the PAG of 75 REM. The number of people receiving those doses could not be calculated at the time of this report due to lack of information on the scope of the plume and the acceleration at which the evacuation was being performed.

This population dose could possibly have been reduced by as much as 25% if TVA had reported the reaction data upon which it based its "General Emergency" declaration, as soon as it was available, to the State Radiological Health Unit at the State EOC. In this way the State could have made its off-site population dose calculations in parallel with TVA and thus eliminated a 15 to 30 minute time lag. KI administration to the general population was recommended.

The State Radiological Health Unit at the State EOC indicated it did not have sufficient data to recommend an evacuation prior to the TVA "General Emergency" declaration at 1318 (EST) - 1218 (CST).

At the State EOC, prompt notification was adequately handled by coordinating siren sounding with both risk counties. EBS messages (tapes) were prepared in advance and are available for immediate use at the EBS stations. Announcements were made at the EOC that the sirens had been sounded and that EBS had released emergency information.

Representatives from the Coast Guard were present at the EOC and coordinated with Tennessee Wildlife Resource Agency in blockading and evacuating the Tennessee River within the 10-mile Emergency Planning Zone (EPZ).

Decisions to require protective actions were thoroughly discussed and were implemented in a prompt manner. The EOC followed the evacuation/sheltering process with status board updates concerning evacuation times and shelter situations.

Implementation of Ingestion Pathway Protective Actions was adequately handled by the State Department of Agriculture. Current agricultural information was available both at the EOC and at the Ellington Agricultural Center in Nashville. Press releases were issued throughout the day advising farmers of the current agricultural recommendations. Animals were sheltered and placed on stored feed and water. Evacuated farmers were instructed not to try to move any livestock from their farms. Farmers would probably be allowed to return to the evacuated area for a short period to tend to their livestock during the evacuation period.

In accordance with the Public Information Plan, there were no media briefings conducted from the State EOC. Contents of news releases were prepared at the SEOC and forwarded to the JIC for release or prepared at the JIC and forwarded to the SEOC for approval prior to release.

The scenario was adequate to test the emergency response capabilities of the State EOC.

Central Emergency Control Center (CECC)

The State dispatched one representative to the CECC to serve in a liaison capacity. This emergency management representative was instrumental in enhancing communications and coordination between the State Emergency Director (TEMA) and the TVA Emergency Director.

Overall, these communications at this high level between TVA and the State EOC were effective and timely. There were some minor problems which were corrected during the course of the exercise dealing with telefaxing of hard copy data to the State EOC in Nashville.

However, there continues to be a concern in the breakdown of communications between the TVA dose assessment group in the CECC and the States' Division of Radiological Health located in the State EOC in Nashville. Each of these technical organizations functions independently of each other which hampers the ability of the State to perform a timely, independent analysis of the emergency conditions. The State Division of Radiological Health at the State EOC is in need of certain raw technical data to perform this assessment, which during this exercise was generally received in an untimely fashion or not at all.

This concern was noted in the previous exercise and again the State is requested to give serious consideration to dispatching a technical representative from the State Health Department to the CECC to facilitate coordination and communications. In the event this is not feasible, as a minimum, interface procedures (formal or informal) must be developed and implemented to ensure optimum coordination between the State EOC and the CECC.

Joint Information Center (JIC)

The Sequoyah Exercise was adequate to address a reduced function Joint Information Center (JIC). The activities demonstrated satisfied the objectives for this partial exercise. The limited availability of State public information officers created the opportunity to use this exercise as a training tool for staff normally participating in other response operations. Approximately fifteen staff participated in the JIC operation. All staff demonstrated a sincere dedication to getting the job done and done well. The enthusiasm was high and continued throughout the exercise play.

Two new staff positions in the plan, a Radiological Health Advisor and JIC Operations Officer, added greatly to the Tennessee capability. These two added positions resolved previously noted weaknesses in the JIC staff.

Alerting and staff activation were not objectives for this exercise. All staff were prepositioned. However, an alerting system is in place and staff could be notified at any time.

The facilities for the JIC operations are excellent. The work space for the State and local operation is adequate. The briefing facilities provided for the media offer the most up-to-date equipment to support live coverage. In addition, the State and TVA supported an Up-Date Desk to respond to the needs of the media between press briefings.

Communications however, are a problem area. Additional telephone lines are needed to adequately allow State and local PIOs the opportunity to coordinate information. During the exercise both Hamilton and Bradley County PIOs shared a telephone line which caused the counties to be delayed in receiving or collecting public information. Internal communications were good. Status boards were posted and message logs well maintained by all staff.

Releases to the public were prepared and coordinated with all parties involved. Media briefings were held and the appropriate State and local representatives were available to respond to media querries. Where answers were not instantaneous, follow-up was managed effectively.

The mock media used for the exercise were excellent. University of Tennessee students asked questions of the PIO players, giving a realistic aspect to the play. Some of the questions were not easily addressed and did indeed test the players. The mock media did a good job and added greatly to the exercise.

Many players expressed the difficulties of getting everything done during a rapidly escalating scenario. But media briefings were conducted and press releases prepared as the emergency scenario developed.

Rumor control was incorporated in all aspects of the JIC operation, from broadcasting the toll-free number to responding to rumors called in through media briefings and releases.

County PIOs were an added measure of improvement as this tied the State and local information more closely. When better communications capability is available, this could be even more effective.

Radiological Monitoring Control Center (RMCC)

The new location for the RMCC worked effectively, however, minor communication problems were experienced in the SEOC DRH ring-down phone and facsimile verification phone. Communication between the RMCC and the field teams was effective and minor problems were corrected quickly. Shift changes were made in some personnel and these activities were conducted smoothly. Additional information from the State EOC should be provided in a timely manner to the RMCC, especially dose projections, plume projections and meteorological data which effect the positioning of field teams and their safety. Overall, there were no major problems at the RMCC, and the State and TVA personnel worked effectively to define the problem as directed from the State EOC.

Four RMCC staff were under-utilized. If given sufficient information and decision-making authority they could assist the State EOC in confirming plume projections and doses.

Suggestions for improvements for the RMCC include:

- Additional phone line is needed for facsimile verification in the RMCC.
- Phone lines set aside for EPA and DOE should be moved to the new RMCC location and additional consideration given to accommodating the Federal coordinators in this room.
- RMCC Director's ring-down phone to SEOC DRH should connect directly to the DRH Director.
- Posting information about plant status, emergency classifications, and meteorological data in the RMCC would be helpful.
- A wall clock in the RMCC would be useful.

Field Radiological Monitoring

Mobilization of field teams was not demonstrated. Team members were prepositioned for the exercise, but well-versed in mobilization and reporting requirements. Mobilization has been demonstrated in previous exercises.

Equipment was generally adequate. However, the air samplers did not have calibration stickers reflecting the date of the most recent calibration, and one air sampler (Team #1) was inoperative.

Generally, teams have adequate training to carry out technical field operations. However, some difficulties were noted: 1) the initial equipment check out did not use checklists or SOPs. The air samplers were not checked -- one was later found to be inoperative, 2) Team No. 3 did not use SOPs although they were present, 3) Team No. 3 got lost and had difficulty reading the maps, and 4) the monitoring point reference descriptions had several inaccuracies.

We suggest that training in map reading include the noting of mileages from the map and comparing to odometer readings, cross referencing to actual landmarks, and double checking with the monitoring point descriptions.

Communications were generally adequate, but occasional dead spots were noted. Teams should be encouraged to move to high ground to transmit, use other teams to relay, or use the PSC backup communications (Team No. 3 was unfamiliar with these procedures).

Team members never used the prefix "This is a Drill" for transmissions. This is particularly important for transmissions of radiation readings.

Field teams were not advised generally of plant status, emergency actions level, meteorological data, dose projections or protective actions underway.

Teams had adequate dosimetry and knew when to read them. The SOPs indicated exposure limits although Team No. 3 was not aware of either the limits or the fact they were available in the SOPs. Only one PSC driver had dosimetry.

There are insufficient anti-contamination outfits and respirators for team members and PSC driver. The respirators are a particular concern.

Risk Counties

Medical

The medical drill observed included the EMS managing a contaminated individual, transporting the individual to Erlanger Hospital, and the hospital staff treating the individual as well as decontamination.

Even though radio communications exist, the ambulance in transit did not communicate with the receiving hospital. Erlanger Hospital does not want to talk with the incoming ambulance service in advance of arrival.

The EMS coordinator at the County EOC did not inform the hospital that an ambulance was dispatched to the shelter to pick up a contaminated person and would transport that person to the hospital.

The hospital staff performed the required procedures for handling a contaminated individual. However, since they were not informed of the person's expected arrival, the transport vehicle, EMS personnel and the contaminated individual sat in the vehicle until the receiving area could be prepared. In this case, the person was not injured. The hospital, however, made no attempt to contact the EMS personnel to determine the contaminated person's condition.

Transportation/Evacuation

Four traffic control points were observed during the exercise:

I-75 and S.R. 60 (Bradley County)
I-75 and Exit 20 (Bradley County)
S.R. 58 and Chapion Road (Hamilton County)
I-75 and Hunter Road (Hamilton County)

All of the traffic control point personnel observed were veteran Deputy Sheriffs. They were aware of their responsibilities and no deficiencies were noted. Route alerting was observed and the Deputy Sheriff adequately demonstrated actual procedures to be used in an emergency. Evacuation route signs are well-placed and in sufficient numbers to aid evacuation.

Personnel was not exactly sure of the maximum doses allowed. However, they were in close contact with their command posts and could easily obtain the correct answer.

Hamilton County issues both low-range and mid-range dosimeters. Bradley County issues only low-range dosimeters. Worker exposure control appears to be adequately managed. Field workers have received training in this area, but like all things, refresher training would be helpful.

Hamilton County

The Hamilton County EOC is an excellent facility and has an exceptional staff. Leadership was good. Authority was effectively delegated among emergency management staff. EOC mobilization was timely. Response personnel were aware of their responsibilities and demonstrated their ability to respond quickly and effectively. Copies of the Sequoyah Plan were available for reference, if necessary, as well as procedures.

A shift change was demonstrated, although it did not appear as if all second shift staff had the opportunity to play. Continued training should assure maintenance of high level performance and assist newcomers and alternate staff in understanding their responsibilities.

As noted above, the EOC facility is excellent. It is spacious and well-equipped. Security for the facility was maintained effectively by uniformed police officers. Maps were large and easily readible. It would be helpful to include information on population by sector, for quick reference. (J.10.b.)

Communications equipment was adequate and redundancies proved effective and were used as needed when minor problems developed.

The system for message handling was satisfactory. Logs of incoming messages and responses were kept. A standard message form was useful to personnel. It is suggested that responders be advised to write how to contact the originator of messages, as they are relayed.

There was confusion regarding the necessity of taking KI, with the county expecting to receive information at 2:00 p.m. EST. This was not forthcoming. The county finally learned of orders to take KI about two hours later through news release #5. (J.10.f.)

The information on the location of individuals requiring assistance in the event of evacuation is five years old and is currently being updated. This should assist the county in meeting the needs of these persons. (J.10.d.)

A minor point; terminology regarding emergency status levels needs to be understood. Occasionally, terms for status levels were mixed, e.g., reference to a "site area alert." This could lead to confusion. Further training would be helpful in this regard.

In summary, the Hamilton County EOC operated smoothly throughout the exercise, and demonstrated the county could effectively manage their responsibilities in an emergency situation at the Sequoyah Nuclear Power Plant.

The Command Post West was located at a fire station with ample space and facilities. Activities during the time observed were limited. There was an indication that additional training would be beneficial, especially on the use of radiological monitoring equipment.

The Command Post East was located at a fire station on Highway 58 and moved to another fire station when evacuation was ordered. Both locations provided ample space and facilities. The Command Post Coordinator and his staff were well-informed and operated in an efficient manner. Support agencies were alert and performed well.

The Shelter Information Points (SIPs) were manned by knowledgeable individuals from the Tax Assessor's Office. There was some confusion about maps, but it has been resolved. Dosimeters had been explained, but were not issued. The SIP personnel could benefit from some detailed radiological monitoring training. Since these people will be the first line of official contact for evacuees, they probably should know more about nuclear power plant accidents, radioactivity, etc. Overall, however, these people did a good job, and they knew the things they were supposed to know -- where the shelters were, and how to direct evacuees to them.

Activity at the shelter was also well-managed. Red Cross, Hamilton County Health Department, and City High School were represented. The Red Cross is responsible for shelter management and nursing. Both positions were filled by qualified individuals. The Health Department is responsible for radiological monitoring, and they did a good job as well. The shelter is short in numbers of radiological monitoring equipment (one CDU-700 low-range survey instrument). Two of these were available during the exercise, but representatives from the Health Department stated that only one would be available for a real situation. Low-range dosimeters should be made available.

The question about the availability of proper instrumentation, low-range survey meters and low-range dosimeters, needs to be resolved.

Bradley County

The Bradley County EOC facility contains adequate space but could be better arranged. Because of its location next to a basement garage, ventilation and noise control are extremely poor. There are no provisions such as restrooms, kitchen and bunking for long-term operation. (H.3.)

This deficiency remains unresolved from previous years. However, there is a new EOC under construction across the street which should correct the above-mentioned inadequacies and, we understand, will be completed in 90 to 120 days.

Leadership was excellent in that the Director was effectively in charge, made logical decisions, and engendered enthusiasm and coordination among the staff.

Staff was prompt in reporting to the EOC and adequate in number. Fourteen departments and agencies were present in the operations room and were well-coordinated. External communications were adequate. Staff was activated during the Alert because the Director saw that plant conditions were deteriorating.

Internal displays were largely adequate, however, we would suggest a larger, more permanent status board for the operations room, as well as a large EPZ map with population figures by sector. (J.10.b.)

Security was adequate. The single entry to the EOC was guarded by a uniformed guard, and personnel were required to sign in and out. Federal evaluators, however, were overlooked in this process until late in the afternoon of the exercise day.

The briefings made by the EOC Director were well done but infrequent. We would suggest more frequent briefings, and, during the course of those briefings, we would suggest that concise briefings be given by agency chiefs so that all operations personnel could be kept fully informed.

Although the internal message system was adequate, we would suggest that the duplicate numbering systems used for incoming and outgoing messages be changed to a single, sequential numbering system.

The County Sheriff's Department and rescue squad vehicles dispatched route alerting vehicles with sirens, lights and public address systems twice during the exercise. Seven of the 14 routes were run. Route times averaged about 20 minutes, and alerting was accomplished in a total time of about 45 minutes.

The two local radio stations did not broadcast their prepared messages, apparently because the control station, WDOD in Chattanooga, did not notify them.

We would suggest that a radio and TV be set up in the EOC and monitored so that the Director and PIO could know what information is being given to the people of the county.

There was some time confusion in the EOC during the exercise because of the mixed use of Eastern Standard Time and Central Standard Time. We would offer for consideration the use of both "CST" and "EST" on all messages, and the use of two wall clocks appropriately designated.

A Shelter Information Point and the shelter demonstration at the Waterville Elementary School were observed. The American Red Cross, assisted by Bradley County Public Health Department, and Human Services Department workers demonstrated the opening of a shelter.

Fourteen evacuees were processed through registration. Staff on hand had good attitudes and worked well together. It was apparent that Shelter Manager, Ms. Noelck, had done a great deal of preplanning regarding activities and where they would occur. Some additional support is clearly needed. Again this year no security personnel were present for control of evacuees and security. The County Plan calls for this presence, as well as local amateur radio representation -- but none was there.

The 14 evacuees were not monitored. There is some confusion as to exactly what procedures are to be followed in the event of a contaminated evacuee. The Shelter Manager stated decontamination would be done in school restrooms (where there are no showers). Ambulance drivers (Mr. McCullum and Mr. Sink) arrived and very capably demonstrated the handling and transporting of a contaminated evacuee to the hospital; however, they indicated that in a real emergency, a fire truck would come to the shelter and evacuees would be decontaminated on the spot. This needs to be clarified with all involved personnel.

Closer interaction and understanding is needed between participating agencies and organizations. For example, shelter personnel were unaware of the function of Shelter Information Points, registrars did

not know evacuees would be arriving with pre-numbered tickets (in order to control shelter capacity). The County Plan (page 416) calls for emergency management to provide Red Cross a computer print-out indicating the location of non-sheltered evacuees. The emergency management personnel were unaware of this requirement.

Overall, Bradley County does have the capability to protect the population. However, some of the weaknesses noted at the last exercise have not been addressed during the past year. All personnel interviewed seemed eager and willing to work together in the coming months to strengthen and perfect their response efforts.

III. SUMMARY LISTING OF DEFICIENCIES

	NUREG 0654 Deficiencies
State of Tennessee	None
Hamilton County	J.10.b. - Protective Response
	J.10.d. - Protective Response
	J.10.f. - Protective Response
Bradley County	* H.3. - Emergency Facilities and Equipment
	J.10.b. - Protective Response

* Recurring deficiency from the last exercise in July 1983.

IV. APPENDICES

A. Evaluator List and Assignments

B. Exercise Objectives

C. Exercise Scenario

FEDERAL EVALUATOR ASSIGNMENTS
SEQUOYAH NUCLEAR POWER PLANT EXERCISE
February 6-8, 1985

CHIEF OF EVALUATORS AND RAC IV CHAIRMAN
Glenn Woodard (FEMA)

STATE EMERGENCY OPERATIONS CENTER (EOC) - NASHVILLE, TN
John Heard (FEMA)
Cheryl Malina (USDA)
Dick Payne (EPA)

RADIOLOGICAL MONITORING CONTROL CENTER (RMCC) - CHATTANOOGA, TN
Jeff Slack (DOE)

JOINT INFORMATION CENTER (JIC) - CHATTANOOGA, TN
Cheryl Stovall (FEMA)

CENTRAL EMERGENCY CONTROL CENTER (CECC) - CHATTANOOGA, TN
Bob Trojanowski (NRC)

MOBILE TRANSPORTATION/FIELD ACTIVITIES
Al Hall (DOT)

MEDICAL SERVICES
Brad Eichorst (FDA)

MOBILE RADIOLOGICAL HEALTH
Brad Eichorst (FDA)

RADIOLOGICAL FIELD MONITORING
Ray Boyett (FEMA)
Tony Folcman (FEMA)
Don Fingleton (FEMA)
Don Dodson (FDA)

HAMILTON COUNTY - CHATTANOOGA, TN
Shana Aucsmith (FEMA)
Russell Yarbrough (FEMA)
Doug Hoell (FEMA)

BRADLEY COUNTY - CLEVELAND, TN
Tom Hawkins (FEMA)
Virginia Baker (FEMA)

STATE OBJECTIVES (Change 1)
SEQUOYAH NUCLEAR PLANT
1985 RADIOLOGICAL EMERGENCY PREPAREDNESS EXERCISE

The 1985 partial exercise will be aimed primarily at demonstrating the capability of local government to provide timely and effective warning and protection to those citizens who might be affected by an incident or accident at TVA's Sequoyah Nuclear Power Plant. The following objectives will be met:

1. To test, evaluate, and confirm the capabilities of TVA, and local governments to carry out their respective responsiblities as specified in the Tennessee Multi-Jurisdictional Radiological Emergency Response Plan for the Sequoyah Nuclear Power Plant.
2. To activate partial state and local emergency operational facilities and evaluate their functional adequacies with emphasis on internal/external communication, coordination, and security.
3. To activate a reduced function Joint Information Center (JIC) (replacing the Near-site Media Center) to test its functional adequacies with respect to direction and control, internal/external coordination, facilities, security, and ability to meet the needs of the Public Information Function as it relates to the counties only.
4. To demonstrate timely notification, on a 24 hour basis of local, state, and federal emergency response staffs and public officials following an incident at the facility.
5. To exercise external communication systems among TVA, state, and local emergency operations centers, and some field locations (e.g. RMCC). Federal agencies will also be notified.
6. To demonstrate the organization, control, leadership, and support of emergency response personnel (primarily on the local level) and their ability to make timely and effective decisions during an incident at the facility.
7. To test the reliability of public alerting and notification systems in the risk area. Timely response of County alerting officials, will be evaluated. NOAA and EBS will activate one time with subsequence activations to be simulated.
8. To test and evaluate the adequacy, appropriateness, and effectiveness of the flow of information, the maps and other visual displays within

the State Emergency Operations Center (SEOC), Radiological Monitoring Control Center (RMCC), JIC, and local EOC's.

9. To test monitoring equipment adequacy, field team coordination, technical calculations, and the accuracy and timeliness of overall accident assessment. The ability of the RMCC to coordinate and direct state and federal teams, synthesize reports and issue timely recommendations to the SEOC also will be evaluated.
10. To evaluate the staffing capability and operational readiness of mass care shelters by the American Red Cross and other private organizations.
11. To demonstrate state and local governments' ability to evacuate affected populations, including those with special needs within the 10 mile EPZ (in both Bradley and Hamilton Counties) by simulating a safe and expeditious evacuation using designated routes and prescribed proceedures.
12. The exercise scenario will provide for the identification and classification of all emergency classes.
13. The scenario will provide for inplant post-release sampling and for health physics response both on-site and off-site.

SEQUOYAH PARTIAL EXERCISE 1985
OFF-SITE RESPONSE NARRATIVE

February 6, 1984

0800 - 1000 (CST) - ALERT

State:

The off-site response begins with notification from TVA's Central Emergency Control Center (CECC) by ring down telephone to the Tennessee Emergency Management Agency (TEMA) duty officer that an ALERT has been declared at the SEQUOYAH Nuclear Power Plant. The Director of TEMA (or his designee) will be notified. The Director of TEMA will notify the Governor, State of Tennessee, and the Adjutant General, State of Tennessee. The duty officer will notify:

*a. Division of Radiological Health (DRH) to standby.

b. Field Coordinator of the Field Coordination Center (FCC) to standby.

c. Tennessee Highway Patrol (THP) to standby.

d. Hamilton County Civil Defense.

e. Bradley County Civil Defense.

f. Emergency Broadcast System (EBS) and National Oceanic and Atmospheric Administration (NOAA) Radio to standby.

g. JIC Coordinator and TEMA PIO.

*The Division of Radiological Health notifies other Divisions of the Department of Health and Environment to standby and to be prepared to man the FCC.

The Director of TEMA has the option to activate the prompt notification system depending on the situation at the plant. He may selectively man the State Emergency Operations Center (SEOC) and the JIC if he so desires. Once the primary notifications are complete, the duty officer will notify the following agencies to standby or report to their assigned duty stations as the State Director may order.

a. Governor's Press Secretary

b. Tennessee Department of Transportation - Standby to man FCC

c. Tennessee Department of Agriculture - Standby to man FCC

d. Tennessee Wildlife Resources Agency - Standby to man FCC

e. American Red Cross
f. Public Service Commission - Standby to man FCC
g. Department of Tourism - Standby to man FCC
h. U.S. Department of Energy - Standby to man FCC
i. Host counties, Meigs, Rhea, Sequachie - Standby to open shelters.

Local:

Hamilton and Bradley County Civil Defense Directors proceed to notify the County Executives/City Mayors of municipalities within the 10 mile EPZ and essential response staff and volunteers. The County EOC may be selectively manned at this time at the Directors' discretion.

1000 - 1200 (CST) - SITE AREA EMERGENCY

State:

When SITE AREA EMERGENCY is declared, TVA's CECC will notify the SEOC as in ALERT. The TEMA Director will order the activation of the SEOC, the RMCC, and the JIC and simulate the activation of the FCC. DRH and TVA field monitoring teams will be dispatched from their present locations and ordered to assemble at the RMCC for further instructions. They will be dispatched from the RMCC to various locations as the situation requires. When in place, the field monitoring teams provide off-site monitoring data to the RMCC where the data is jointly assessed. TVA will make recommendations for off-site protective actions, if warranted. These actions are confirmed by DRH and provided to the TEMA Director and the Governor for action. The TEMA Director will consider activating the prompt notification system soon after notification of the classification. When activated, the fixed siren system, mobile alerting routes, and EBS/NOAA weather radio systems will be exercised. (All other activations of these systems will be simulated) The entire 10 mile EPZ should be notified by this means within 45 minutes. Residents should secure their homes and remain tuned to EBS for further instructions. The Tennessee Wildlife Resources Agency (TWRA), the U.S Coast Guard, and volunteers, will provide notification to commercial river traffic within the 10 mile EPZ. They will restrict ingress into the zone. Persons in recreation areas will also be notified by this means. Since no release has occurred at this

point, no further protective action will be warranted.

All State Emergency Services Coordinators (ESCs) assemble at the SEOC, RMCC and the JIC. The FCC function will be simulated. All field forces remain in place and are on standby status. The Tennessee Department of Agriculture (TDA) assesses the need for protecting dairy animals and milk processing plants. TDA in coordination with the JIC should release "get ready" instructions to the agricultural community.

The JIC is activated and the public information system is put in place. Media releases are prepared and briefings are planned and carried out under the direction of the State and TVA JIC coordinators. TEMA staff members will perform the functions of PIO's for cross training purposes.

Local:

Hamilton and Bradley County Civil Defense Directors are notified immediately of the SITE AREA EMERGENCY. They activate their county EOC's. County Department heads and other response leaders pre-position equipment and staff as required. County Sheriff notify and/or coordinate all necessary support (municipal police departments, THP, fire, rescue, etc.) resources. Traffic Assistance Teams (TAT's) are notified and placed on standby. School superintendents and their transportation staff, and the Chattanooga Area Rapid Transit Authority (CARTA), are notified that school buses and a limited number of CARTA buses may be needed for general population evacuation.

1200 - 2000 (CST) - GENERAL EMERGENCY

State:

A GENERAL EMERGENCY is declared when a significant release occurs. The SEOC is notified of the change by ring down phone and immediately notifies:

a. Staff present in the SEOC
b. County EOC's
c. State Field Centers (RMCC/JIC) (FCC will be simulated)
d. Any state agency required

Due to the magnitude of the release, TVA and DRH recommends to the TEMA Director that an evacuation be ordered within the two mile zone and five

miles downwind within the 10 mile EPZ. At the recommendation of the Director of TEMA, coupled with the advise of TVA and DRH, the Governor declares a state of emergency and orders the recommended evacuation.

DRH and TVA continues to assess the need for further evacuation and sheltering downwind from the plant and continue to jointly assess field monitoring results and make appropriate recommendations. Plume tracking commences and field teams are dispatched to selected areas. TDA orders the sheltering of dairy animals and live stock within two miles of the plant and sectors downwind out to 10 miles. They may also assess the need for further protective actions out to 20 miles.

All state and local off-site responders are activated and positioned at County EOC's and field locations.

The JIC continues to provide the media with information regarding conditions at the plant, evacuation, and other public information.

Hamilton and Bradley County Civil Defense Directors proceed with implementing the evacuation plans for the sectors affected. All responders are activated or remain on standby. The Sheriffs, having confirmed the completion of alerting the public, dispatches personnel to man critical road blocks, assist in the orderly evacuation along control routes, and provide security to the evacuated areas. Traffic Assist Teams (TATs) are dispatched to critical locations along the evacuation routes. All law enforcement support (police, THP, rescue, etc.) resoures are utilized as needed. Sheriffs continues to coordinate this function. The County Road Departments, assisted by TDOT personnel and equipment set up road blocks and barriers at predetermined points in the affected section.

The American Red Cross (ARC) mans shelters as needed and begins their locator service. ARC staff are assisted by Tennessee Department of Human Services in managing shelters. Shelter Information Points (SIPs) are established along the evacuation routes and provide information to those in need. The EMS personnel simulate transportation of non-ambulatory evacuees in need of transportation and respond to any medical evacuation needs.

Bradley County will simulate evacuation of effected sectors to demonstrate their ability to conduct general population evacuation. At least one contaminated victim will be transported to Bradley Memorial Hospital for treatment.

Following the initial release from the plant, TVA and DRH field monitoring teams will be instructed by the RMCC to broaden their area of monitoring. They will continue to report back to the RMCC at 15 minute intervals. This intensified monitoring effort will continue until the plant reaches stability.

1900 (CST) - PLANT REGAINS STABILITY

At this point the plant reports to the CECC, SEOC, etc. that the plant has returned to normal following the resumption of main power to the plant. Recovery plans are formulated and recovery begins at this time.

2000 (CST) - TERMINATE THE EXERCISE